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EPA Superfund
Record of Decision:

F.E. WARREN AIR FORCE BASE
EPA ID: WY5571924179
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CHEYENNE, WY
03/13/1996

Text:

<IMG SRC 0896126>

RECORD OF DECISION

FOR AN INTERIM ACTION

OPERABLE UNIT 3 - NOB HILL

F. E. WARREN AIR FORCE BASE, WYOMING

FEBRUARY 13, 1996

U. S. AIR FORCE FINAL DOCUMENT

DECLARATION FOR THE RECORD OF DECISION INTERIM ACTION OPERABLE UNIT 3 - NOB HILL

1.0 SITE NAME AND LOCATION

F. E. Warren Air Force Base Cheyenne, Wyoming

2.0 STATEMENT OF BASIS AND PURPOSE

The selected interim action (remedy) for Operable Unit 3 (OU3), Nob Hill, at F.E. Warren Air Force Base (Base), in Cheyenne, Wyoming is the PROVISION OF AN ALTERNATE WATER SUPPLY BY THE CONSTRUCTION OF A RESIDENTIAL WATER LINE. The selected action was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan NCP). The interim action will ensure a safe, permanent drinking water supply for the Nob Hill community. The remedy addresses exposure to contaminated ground water in the Nob Hill area Remediation of Landfill 3 and contaminated ground water associated with Operable unit 3 will be addressed under separate records of decision (RODs). The decision for the Nob Hill portion of OU3 is based on the Administrative Record for the site. The United States Environmental Protection Agency (EPA), and State of Wyoming Department of Environmental Quality (WDEQ), serving as oversight agencies, concur with the selected remedy. The United States Air Force (USAF) is the lead agency for the site.

3.0 ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the remedy selected in this Record of Decision (ROD), may present a current or potential threat to public health, welfare, or the environment.

4.0 DESCRIPTION OF SELECTED REMEDY

The selected remedy for Nob Hill involves including the Nob Hill residential area within City of Cheyenne's water supply system. This remedy involves expanding the City of Cheyenne's current water supply system by constructing a water supply line to the Nob Hill area, permitting the residents of Nob Hill access to an alternate water supply. This remedy for Nob Hill is considered final and supplants the current action of supplying the Nob Hill residents with bottled water. The remedy described above is specific to the Nob Hill portion of OU3; remedies selected for the remaining portions of OU3 (Landfills 3 and 6) will be described under separate RODs for OU3.

5.0 STATUTORY DETERMINATIONS

The USAF has determined, with the concurrence of the EPA and the WDEQ, that the final remedy selected for Nob Hill is protective of human health, complies with Federal and State applicable or relevant and appropriated requirements (ARARs) directly associated with this action, and is cost-effective. This action of providing an alternate water supply utilizes permanent solutions to the maximum extent practical for this site. This remedy does not satisfy the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element of the remedy. However, treatment of ground water, and remediation of Landfill 3, will be addressed in subsequent actions which will be taken at Operable Unit 3.

CERCLA Section 121 (c), 42 U.S.C. Section 9621 (c), requires five-year reviews in the event that hazardous substances, pollutants or contaminants remain on site. The USAF will conduct reviews every five years after issuance of this ROD.

6.0 SIGNATURE OF AGENCY ACCEPTANCE OF REMEDY (EPA)

The undersigned representative concurs with the remedy selected within this Record of Decision for Operable Unit 3, Nob Hill at F. E. Warren AFB, Wyoming.

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6.0 SIGNATURE OF AGENCY ACCEPTANCE OF REMEDY (WDEQ)

The understand representative concurs with the remedy selected within this Record of Decision for Operable Unit 3, Nob Hill at F. E. Warren AFB, Wyoming.

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6.0 SIGNATURE OF AGENCY ACCEPTANCE OF REMEDY (USAF)

The undersigned representative concurs with the remedy selected within this Record of Decision for Operable Unit 3, Nob Hill at F. E. Warren AFB, Wyoming.

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DECISION SUMMARY FOR THE RECORD OF DECISION INTERIM REMEDY OPERABLE UNIT 3 - NOB HILL

1.0 SITE NAME, LOCATION, AND DESCRIPTION

F. E. Warren Air Force Base (the Base), occupies approximately 5,866 acres immediately adjacent to the west side of the City of Cheyenne, Wyoming (Figure 1).

The Base was placed on the National Priorities List on February 21, 1990. Historically, the Base has served a number of military functions, including; cavalry outpost, quartermaster depot and intercontinental ballistic missile operations base. Operations began at the U. S. Army outpost named Fort D. A. Russell in 1867. The name was changed to Fort F. E. Warren in 1930. The Base was a major training facility during and after World War II. Fort F. E. Warren was transferred to the newly formed U. S. Air Force in 1947 and was subsequently named F. E. Warren air Force Base. The Base underwent extensive renovation after World War II. The majority of the Army training facilities were torn down and not replaced. Construction since that time has centered on facilities for Air Force operations. Beginning in 1958, F. E. Warren Air Force Base became a Strategic Air Command Base. Since then, F. E. Warren Air Force Base has served as an operations center for the Atlas Intercontinental Ballistic Missile (ICBM), followed by the Minuteman I and III and finally, the Peacekeeper (MX) ICBMs. The Base was part of Air Combat Command from 1992 to 1993, and in July 1993, became part of Space Command.

F. E. Warren Air Force Base is bordered by agricultural land and rural or suburban residential areas. The Base contains 831 residential housing units and several unaccompanied personnel housing units (barracks), along with the services required by residents.

2.0. SITE HISTORY AND ENFORCEMENT ACTIVITIES

OU3 consists of Landfill 3, Landfill 6, and Nob Hill. This ROD discusses the selected interim action for Nob Hill. Remedial investigation (RI) activities conducted as part of OU3 identified the off-base movement of a ground water contaminant plume originating from the Landfill 3 area. The contaminant plume was determined to be migrating down-gradient toward the Nob Hill subdivision.

A search of available records indicated that Landfill 3 was a trench-and-fill operation from 1941 until 1947, and that hardfill was deposited at the site after 1947. Some burning probably occurred in Landfill 3 based on the 1992 site reconnaissance which indicated the presence of ash, cinder, general debris, and construction material at the surface of Landfill 3. The general refuse deposited at Landfill 3 includes waste from the Base shops. A driver training area was located around the landfill area during World War II. Construction of Happy Jack Road in 1988-89 involved the area to the southwest of the landfill, but the landfill itself was not disturbed. A more detailed description of site characteristics (including contaminants detected during the OU3 RI) observed at both Landfill 3 and Nob Hill is presented in Section 5.0.

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On September 26, 1991, a Federal Facility Agreement (FFA) was signed between the USAF, EPA, and WDEQ. The FFA is required by Section 120 of CERCLA. The FFA provides the framework for EPA AND WDEQ oversight of continuing remedial investigations at the Base and further identifies USAF investigation activities and schedules. The USAF submits work plans and reports to EPA and WDEQ for review and comment, in accordance with the FFA.

3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

The USAF has prepared and implemented a community relations plan (CRP) in accordance with CERCLA requirements, and the FFA. The CRP describes community involvement activities the USAF will undertake during remedial activities at the Base. The USAF has followed the requirements of the CRP, including issuance of periodic fact sheets, holding public meetings, and providing the opportunity for public comment on the Proposed Plan throughout the OU3 investigation.

The Administrative Record has been established at an on-base location and the Base maintains an Information Repository at the Laramie County Public Library. The USAF has prepared and distributed fact sheets to all persons or groups identified on the CRP mailing list (approximately 600 members). In addition, the Proposed Plan for the preferred remedy at Nob Hill was briefed and copies of the plan were passed out to the Restoration Advisory Board on September 19, 1995.

The announcement of the commencement of the public comment period was made on October 15, 1995, through advertisements in the Wyoming Tribune-Eagle and in the Casper Star-Tribune. These advertisements announced and outlined the public comment period and public meeting time. The public comment period was scheduled from October 29 to November 27, 1995. Additional announcements concerning the public meeting and

proposed plan were printed in the Wyoming Tribune-Eagle on 21 October, 31 October and 7 November 1995. An article appeared in the Base Sentinel Paper on October 20 1995. A public meeting was held at Cheyenne, Wyoming on November 7, 1995.

The Channel 5 KWGN television station carried a report about the Proposed Plan for Nob Hill on November 7 1995. KRAE radio carried public meeting announcements periodically throughout this time period.

Responses to all comments on the Proposed Plan are presented in the Responsiveness Summary attached at the end of this ROD.

4.0 SCOPE AND ROLE OF OPERABLE UNIT

F. E. Warren Air Force Base has been divided into ten operable units. Besides OU3, the other OUs include the following: OU1-Spill Sites 1 through 7; OU2-Facility Ground Water; OU4-Acid Dry Wells; OU5-Fire Protection Training Area 2; OU6-Open Burning/Open Detonation Area; OU7-Firing Range(s); OU8- Landfill 5; OU9-Landfills 2 and 4; and OU10-Landfill 7 and Fire Protection Training Area 1.

The ground water contamination associated with OUs 3, 6, 7, and 8 will be investigated and remediated as part of their respective OUs, separate from OU2. All of the investigations are being conducted in accordance with the FFA.

5.0 SITE CHARACTERISTICS

As described in Section 2.0, leachate originating from the Landfill 3 area is the source of the ground water contaminant plume which has reached the Nob Hill residential area. The Landfill 3 plume was identified as containing trichloroethylene (TCE), which is a suspected carcinogen.

No specific characterization has been performed for the Landfill 3 contents. Based on the EPA guidance on presumptive remedies for landfills, the source of contamination is considered to be the entire landfill area. As a result, this section will provide a brief summary of the site characteristics of Landfill 3 as well as the contaminants observed at both Landfill 3 and Nob Hill ground water monitoring wells.

Landfill 3 is a single area covering approximately 7 acres which is located near the southeastern boundary of the Base, north of Happy Jack Road and northwest of the Nob Hill area (Figure 2). Workshop, domestic, and construction wastes were disposed of here. Burning probable occurred in the area as a means to reduce waste volumes. The volume of Landfill 3 is estimated at 15,400,000 cubic feet but the exact depth and area of the landfill are unknown. Depth to the water table in this area ranges from 12 to about 38 feet below ground surface. The landfill has a soil and sparse native grass cover.

Leaching of contaminants from a landfill into the ground water and/or having landfill contents in contact with the ground water are the primary release mechanism for landfill contaminant movement. Leachate originating from the landfill may occur as the result of rain water infiltration and reaction with landfill contents, or from the movement of liquid waste from the landfill to ground water. Also, the contents of the landfill may be in direct contact with the ground water. Investigations are continuing to determine this. As the leachate is mixed and dispersed through ground water transport, contaminants may undergo degradation and transformation reactions producing additional ground water contaminants. The movement of ground water transports contaminants away from the landfill toward potential receptors such as the Nob Hill residents.

As part of the OU3 RI field investigations, samples were collected from Landfill 3 ground water monitoring wells. A ground water sample collected from an on-base monitoring well located 100 feet up-gradient of the Nob Hill area was found to be contaminated with TCE at a concentration of 8.8 parts per billion (ppb). Analysis of a test well nearer the boundary of the Nob Hill area showed TCE at 2.2 ppb. The maximum contaminant level (MCL) for TCE is 5 ppb. The MCL is the maximum permissible contaminant level for a public water supply system as defined by the Safe Drinking Water Act.

Due to the potential for off-base movement of the Landfill 3 ground water contaminant plume, the USAF proposed a ground water sampling program to ascertain the quality of the water supplied by private wells in the Nob Hill subdivision. The Nob Hill subdivision is a triangular shaped residential area located immediately adjacent to Base property (Figure 2). The Nob Hill subdivision consists of 16 residences, 11 of which have private wells as their drinking water source. All of the wells in the area except one were sampled by the Air Force during the OU3 RI.

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During April, 1994 the USAF initiated sampling of the Nob Hill water wells and began providing bottled water to the residents of the Nob Hill subdivision. Analysis of water samples from the Nob Hill water wells indicated the presence of contaminants including tetrachloroethylene (PCE), thallium, and

nitrates at concentrations in excess of their respective federal drinking water standards. The April 1994 analysis showed maximum concentrations of PCE at 11.0 ppb (with a MCL of 5.0 ppb), thallium at 160.0 ppb (MCL = 2.0 ppb), and nitrates at 36.9 parts per million (ppm) (MCL = 10.0 ppm). In addition, TCE was detected in the ground water samples at a maximum concentration of 2.2 ppb (MCL = 5.0 ppb). The well with the maximum TCE concentration had an inoperative pump during an initial sampling effort and was sampled only for volatile organic compounds (instead of the full analytical suite proposed during this sampling effort). This well was subsequently re-sampled and analyzed for the full suite. Analysis of this latter sample showed TCE at 2.2 ppb, while PCE was detected at 130 ppb.

A complete listing of all constituents tested for and the contaminant (s) concentrations observed at Nob Hill can be found in the Focused Remedial Investigation Report for OU3, Landfill 3 (August 21, 1994). This report is located in the Administrative Record on Base as well as the Information Repository at the Laramie County Library.

6.0 SUMMARY OF SITE RISKS

A streamlined risk assessment (SRA) was performed as part of the OU3, Landfill 3 and Nob Hill RI to determine the potential human and ecological exposures and risks from chemicals under baseline conditions. However, the remedy proposed within this ROD is designed to address the risk to human health associated with exposure to ground water for the Nob Hill residents. Indicator contaminants of concern (ICOCs) for ground water identified in the SRA consist of aluminum, barium, chromium, manganese, nitrate, chloroform, cis-1,2-dichloroethene and TCE, as determined from on-base well data.

Landfill 3 is the source of several contaminants found at concentrations that exceed their respective Federal drinking water standard (see Section 5.0). The most prevalent is TCE, considered to be a suspected carcinogen. The carcinogenic risk from exposure to TCE in ground water is within or exceeds the target risk range of 10-4 to 10-6 (1 in 10,000 to 1 in 1,000,000).

Most of the non-carcinogenic ground water contaminants were observed at concentrations that produced a hazard index (HI) well below the action level of 1.0. The HI calculated for the non-carcinogenic chemical observed within monitor well 236 (about 500 feet north-east of the boundary of Nob Hill) was 3.4. The manganese concentration observed in this ground water sample was the major contributing factor to the elevated HI. The next highest HI was calculated at monitor well 207 (0.9).

The EPA performed an abbreviated human health risk assessment (AHHRA)in 1994 based on ground water data obtained from the Nob Hill residential wells. The AHHRA listed chemicals of potential concern for ground water that included: aluminum, antimony, arsenic, barium, beryllium, cadmium, copper, lead, nickel, nitrate, selenium, thallium nitrate, vanadium, 2-butoxy-ethanol, dichlorodifluoromethane, 1,2-dichloroethane, 1,1-dichloroethane, heptachlor epoxide, methylene chloride, 1,1,1-trichloroethane, TCE, and PCE. Exposure pathways that were considered in the AHHRA included: ingestion of ground water; dermal contact with ground water while showering; inhalation of volatiles from water use; inhalation of volatiles from the ground water through soils; and ingestion of vegetables and fruits irrigated with the ground water.

The AHHRA calculated that the carcinogenic risks derived from exposure to the ground water chemicals of potential concern listed above ranged from 1.7 x 10-6 to 1.8 x 10-4, which indicates that the total carcinogenic risks may be within or exceed the target risk range of 10-4 to 10-6. While there was no single significant chemical that produced an unacceptable risk, arsenic, beryllium, 1,1-dichloroethane, and PCE all contributed accumulative factors. All but one non-carcinogenic HI calculated within the AHHRA were below the action level of 1.0. Thallium concentrations raised the HI to 49.0 at this residence. The next highest HI was 0.77.

The selected remedy for Nob Hill will reduce the potential risks created through exposure to the contaminated ground water emanating from Landfill 3 by eliminating the potential exposure pathways (ingestion, inhalation, dermal contact, etc.) associated with the ground water contaminants. Exposure to the hazardous substances within the ground water specific to Nob Hill, if not addressed, may present a current or potential threat to human health.

7.0 DESCRIPTION OF ALTERNATIVES

Three alternatives were evaluated within the Focused Feasibility Study prepared for the OU3, Landfill 3, residential water wells (Nob Hill). All three alternatives are summarized in this section. One of these alternatives is expected to be the final remedy selected for Nob Hill and will thus be incorporated within the final remedy selected for OU3.

Alternative 1 is no action. Consideration of the no action alternative is required by the National Oil and Hazardous Substances Pollution Contingency Plan. The no action alternative requires no further remediation beyond that which has previously been accomplished or that which is currently underway (bottled

water deliveries began in April 1994 and are continuing). Ground water monitoring activities of the private water supply wells in the Nob Hill subdivision would be performed annually along with the continued delivery of bottled water under this alternative.

Alternative 2 involves connecting the Nob Hill residences to the City of Cheyenne municipal water supply (CCMWS) system. Potable water is available from the CCMWS system by tapping a nearby city water transmission main. This alternative would be effective in preventing exposure through ingesting of contaminated water. Additionally, this alternative would be effective in preventing exposure through inhalation of vapors or dermal absorption during showering and other household uses. Connection of NOB Hill residences to the municipal water supply is readily implemented and would provide long term effectiveness in protecting human health.

Alternative 3 involves the installation of individual filtration treatment units to each private water supply well in the Nob Hill subdivision. Carbon filtration, in addition to other treatment units if necessary, would be effective in preventing exposure to TCE, PCE, and nitrates which have been detected to date in the private residential water wells. Installation of individual home treatment units would be a readily implemented technology. Regular monitoring of the effectiveness of the units would be required to ensure protection against exposure to contaminated water. The filtration and processing units would require periodic replacement.

8.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

Alternatives 2 and 3 are protective of human health because they minimize the potential risks associated with exposure to contaminated ground water. Compliance with Federal and State ARARs directly associated with the technologies employed with Alternatives 2 and 3 will be assured.

Each of the alternatives has been evaluated against the nine criteria established in the NCP for conducting RI/FS activities under CERCLA to provide a basis for comparison. The results of this comparative analysis are summarized below.

1. Overall Protection of Human Health and the Environment: Alternative 1, (No Action) does not provide protection to residents whose potable water comes from private wells. Although drinking water is being provided, exposure could still occur from domestic uses (i.e. bathing or cooking) through both dermal or inhalation pathways. Under Alternative 1, Nob Hill residents would be exposed to contaminated ground water which would potentially result in unacceptable cancer and non-cancer risks. The provision of bottled water will stop once the proposed interim action is in place. Alternative 2, (water line) would provide water from a system which complies with federal drinking water standards. As such, this alternative would be protective of human health. Alternative 3 (Home treatment units/filters) would protect residents from exposure to contaminated ground water.

2. Compliance with ARARs: Under Alternative 1, residents using private water wells in the Nob Hill subdivision would be exposed to contaminated ground water exceeding ARARs (federal drinking water standards). Since the City of Cheyenne municipal water supply is subject to compliance monitoring, using Alternative 2 would result in Nob Hill residents being provided with water which meets ARARs (Federal Drinking Water Standards). Alternative 3 would also comply with federal drinking water standards by removing the contaminants via tap filters. Alternative 2 will meet the ARARs identified in Appendix A, but not other ARARs identified in the Feasibility Study relating to remediation of the ground water contamination or soil contamination that may cause ground water contamination. Because this action is off-site, all required permits for the construction of the water line will be obtained.

3. Long-Term Effectiveness and Permanence: Alternative 1 does not provide a long term effective solution to the potential risks posed by the contaminated ground water emanating from Landfill 3. Alternative 2 is considered to be a permanent remedy. After connection of the Nob Hill residences to the CCMWS, exposure to contaminated ground water in the residences would be eliminated. Alternative 3 is not considered a permanent remedial action since replacement of the carbon filters would be required on a periodic basis.

4. Reduction of Toxicity, Mobility, and Volume Through Treatment: This

criterion is not addressed by alternatives one and two which were evaluated under the feasibility study for OU3, Landfill 3 Residential Wells (Nob Hill). Alternative 3 (filtration and water treatment) does treat the ground water in the water wells but does nothing to remediate the ground water plume originating from Landfill 3. The remedy selected for containment and/or treatment of the contaminated ground water plume at OU3, Landfill 3 will be documented within the OU3, Landfill 3 ROD.

5. Short-Term Effectiveness: Alternative 1 would have no short-term impacts to the surrounding community or workers associated with the remedial action since no action is taken. However, Alternative 1 would result in continued exposure of Nob Hill residents to contaminated ground water. No exposure of workers, residents, or the environment to ground water contaminants would occur as a result of construction of the water line described under Alternative 2. Once initiated, Alternative 2 could be completed within a relatively short period of time (projected completion within 60 days). Under Alternative 3, a possibility exists of worker exposure to ground water contaminants during installation of the filter units. This exposure would be limited to very brief periods of dermal exposure and vapor inhalation from the ground water. It is anticipated that treatment units (Alternative 3) could be installed for each of the sixteen residences within a 60 day time-frame.

6. Implementability: Alternative 1, which would include a long-term ground water monitoring effort of the private residential water wells, is readily implemented. The activities associated with Alternatives 2 and 3 are routinely accomplished. Materials, equipment and services associated with these alternatives are readily available. These alternatives are technically and administratively feasible.

7. Cost: There are no capital costs associated with Alternative 1. Annual ground water monitoring costs anticipated under Alternative 1. Annual be approximately $20,000 for the 16 residences of Nob Hill. For a 30 year project life and an assumed interest rate of 5 percent, the total present worth cost associated with this alternative is approximately $310,000.

The estimated total capital expenditure for Alternative 2, including the design and construction of the proposed water line, is approximately $366,000. In addition, the USAF will pay the hook up costs, estimated at $1,000 per household, for a total capital cost of $382,000. No operation and maintenance (O&M) costs are associated with this alternative.

Capital costs estimated for implementation of Alternative 3, including labor and material, is estimated at approximately $2,000 per household. This results in a total capital cost of $32,000 for 16 homes in the Nob Hill subdivision.

Alternative 3 would involve O&M costs associated with replacement and maintenance of the filters. The estimated cost for each filter is $300, which includes installation. Assuming the filters require replacement three times per year, the annual O&M cost per household is estimated at $900. The total O&M cost for the entire Nob Hill subdivision is estimated at $14,400 per year.

An additional O&M cost which would be incurred under Alternative 3 involves periodic monitoring of the filtered water to verify the effectiveness of filtration. Annual monitoring costs for the entire Nob Hill subdivision is estimated to be an additional $20,000, bringing the total annual O&M costs under Alternative 3 at $34,400.

The total net present cost associated with Alternative 3 is estimated to be $560,000. This estimate uses an assumed project life of 30 years and a assumed interest rate of 5 percent.

8. State Acceptance: The State of Wyoming has indicated support of Alternative 2, connection to City of Cheyenne's municipal water supply. It is unknown whether the State would accept the individual treatment unit

option. It is doubtful that the State would accept Alternative 1.

9. Community Acceptance: Community acceptance of Alternative 2 has been mixed, as based on past experiences at community meetings held to discuss the alternatives in question. A survey of the residents in April 1995 revealed that about half do want to be hooked up to city water. The other half either did not respond to the survey or stated they did not want to be hooked up to city water. The main reason expressed by those residents that did not want to be hooked up to the CCMWS involved a clause in the city's standard agreement for providing water service to out of town residents. This clause prevents residents located outside of the city limits and yet whose potable water was supplied by the CCMWS from fighting future annexation plans proposed by the city.

After further discussions and neighborhood meetings, the Nob Hill residents agreed to the remedy prescribed under Alternative 2. All of the Nob Hill residents signed a petition supporting the water line project following the August 31, 1995 neighborhood meeting.

Community acceptance of Alternative 3 (filtration) is unknown. Community acceptance of Alternative 1 is unlikely.

9.0 DESCRIPTION OF SELECTED REMEDY

The selected remedy for Nob Hill involves including the Nob Hill residential area within the City of Cheyenne's water supply system. This remedy involves expanding the City of Cheyenne's current water supply system by constructing a water supply line to the Nob Hill area, permitting the residents of Nob Hill access to an alternate water supply. Since the City of Cheyenne municipal water supply is subject to compliance monitoring, this remedy results in Nob Hill residents being provided with water which meets the ARARs for this action - Federal drinking water standards (appendix a). Also, because this is an off-site action all required permits for the construction of a water line will be obtained. This remedy will reduce the potential risks created through exposure to the contaminated ground water emanating from Landfill 3 by eliminating the potential exposure pathways (ingestion, inhalation, dermal contact, etc.) associated with the ground water contaminants.

The estimated total capital expenditure for this remedy, including design and construction of the proposed water line, is approximately $366,000. In addition, the USAF will pay the hook up costs, estimated at $1,000 per household, for a total capital cost of $382,000. No operation and maintenance (O&M) costs are associated with this alternative.

This remedy can be completed within a relatively short period of time (projected completion within 60 days of commencement of construction.

10.0 STATUTORY DETERMINATIONS

The USAF's selected remedy for Operable Unit 3, Nob Hill is Alternative 2. Remedial actions implemented under this alternative would achieve risk reduction by limiting exposure to the contaminated ground water by supplying the residents of Nob Hill with an alternate potable water supply. Alternative 2 is more reliable than Alternative 3 because of the potential for the filters to fail without proper maintenance. Regulatory water quality controls imposed on the municipal water supply provides for a more reliable potable water supply to the residents of Nob Hill. Based on the information available at this time, the USAF believes the preferred alternative will be protective of human health and will comply with ARARs.

The preferred alternative described above is intended to address the potential human health risks associated with exposure to contaminated ground water from using private drinking water wells. This interim remedy does not address the remediation of the ground water plume associated with Landfill 3. The final remedy selected for containment and treatment of the contaminated ground water media at landfill 3 will be documented within the Landfill 3 ROD.

11.0 EXPLANATION OF SIGNIFICANT CHANGES

The Proposed Plan was released for public comment on October 15, 1995. The preferred alternative was Alternative 2, where the construction of a water line would provide the Nob Hill residents with a safe, ling term water supply. The USAF, EPA, and WDEQ reviewed all written and verbal comments submitted during the public comment period. It was determined that no significant changes were necessary to the preferred alternative described in the Proposed Plan.

RESPONSIVENESS SUMMARY RECORD OF DECISION OPERABLE UNIT 3 LANDFILL 3; NOB HILL

INTRODUCTION

The responsiveness summary is organized into sections as follows:

A. Overview B. Background on Community Involvement C. Summary of Comments Received D. State Concerns E. Attachment: Community Relations Activities at F.E. Warren Air Force Base.

A. OVERVIEW

At the time of the public comment period, the preferred alternative for the remedial action at NOB Hill, Operable Unit 3, at F. E. Warren Air Force Base, included the provision of an alternate water supply to the residents of Nob Hill via the construction of a municipal water main to the subdivision. This remedial action had been selected by the USAF, the EPA AND WDEQ concurrence and was presented in the Proposed Plan. Based on the public's response and comments received during the public comment period, there are no objections to the preferred alternative.

B. BACKGROUND ON COMMUNITY INVOLVEMENT

Community interest in CERCLA/IRP (Installation Restoration Program) activities at F. E. Warren Air Force Base has varied over the years since the records search and interviews conducted by Engineering Science for the USAF in September 1985. No specific individuals or representatives from organizations have been consistently involved over this period, although numerous groups and persons have been involved from time to time. There is an extensive history of public comment and discussion by the Nob Hill residents, Air Force, EPA, WDEQ and the City of Cheyenne.

The first neighborhood meeting was held with the Nob Hill residents in April 1994 after the USAF discovered the possibility of contaminants reaching the Nob Hill wells. Delivery of bottled water and sampling of the residential water wells began immediately after that meeting. Discussions concerning the proposed water line began in the fall of 1994 with a neighborhood meeting conducted in November 1994. The water line was not accepted by the Nob Hill residents at that time due to the language in the City of Cheyenne's users agreement. This agreement stipulated that any users outside of the city limits, which pertains to Nob Hill, must pay one and a half the standard water users fee and agree to not fight annexation, if proposed, of the neighborhood. Most of the Nob Hill residents did not want to sign this agreement.

Another meeting with the Nob Hill residents in May 1995 still did not resolve the annexation issue. A survey was distributed to the residents in April 1995 to determine their opinions and thoughts on the water line. All eight residents which responded to the survey said they were not interested in a water line if the annexation clause remained in the water users agreement. The Air Force asked the City Council to consider waiving the annexation part of the users agreement. This proposal was presented for a vote to the City Council in June of 1995 and was defeated.

Another neighborhood meeting, hosted by the WDEQ, was held on August 31, 1995 and the residents were once again briefed on the situation. Representatives from several different agencies spoke including the WDEQ, Laramie County and the City of Cheyenne. At this meeting, the Nob Hill residents agreed to the water line and the standard users agreement, including the annexation clause. A petition asking for confirmation of the acceptance of the water line was circulated in September 1995 by the Air Force. All of the Nob Hill residents signed it, thus clearing the way for the Air Force to begin the water line project.

Up to the current date, there have been four neighborhood meeting approximately 20 newspaper articles, and numerous television and radio stories broadcast that concerned the Nob Hill water line.

C. SUMMARY OF COMMENTS RECEIVED

The public comment period on the Proposed Plan for Landfill 3; Nob Hill remedial action, at F. E. Warren air Force Base was held from October 29 to November 27, 1995. No comments were sent in. The only comments received during the public meeting held on November 7, 1995 dealt with the actual location of the waterline. This information will not be available until the design is completed. Also, a question of when the waterline would be completed was asked. The waterline should be completed by summer 1996.

As mentioned above, a survey of the residents was distributed in April 1995. Eight of the residents responded to the survey and all eight said they did not want the water line if they had to sign the agreement with the annexation clause. Three of the responses said they would like to be hooked up to the water line if the annexation clause was waived. The other six did not want to be hooked up even if the

clause was waived.

Following the August 31, 1995 meeting, a petition was distributed to the Nob Hill residents asking for signatures supporting the construction of a water line under the terms of the standard water users agreement (with the annexation clause). All 14 of the residents currently in Nob Hill signed the petition.

D. STATE CONCERNS

The following are the comments received by the Wyoming Department of Environmental Quality:

As a party to the FFA, the State of Wyoming has been involved in ground water investigations and screening of potential remedial alternatives for implementation at Nob Hill throughout the process. The state has indicated its support for the installation of the water line, which will connect the Nob Hill residences to the City of Cheyenne's water supply system, as the most expedient and reliable of available options to ensure that safe water is accessible to the people living in the Nob Hill area.

ATTACHMENT A

COMMUNITY RELATIONS ACTIVITIES At F.E. WARREN AIR FORCE BASE

OVERVIEW

The unique community involvement needs of F. E. Warren Air Force Base IRP/CERCLA activities are addressed in the Community Relations Plan (CRP). In late 1990, during plan development, interviews were held with 56 people representing F. E. Warren Air Force Base, other Federal agencies, State, city and county agencies, community groups, well owners, and other individuals. The most significant issues identified in the interviews were concerns about potential drinking water contamination and about the community involvement process.

ADMINISTRATIVE RECORD and INFORMATION REPOSITORY

An Information Repository and an Administrative Record containing documentation of the IRP/CERCLA process were established in October 1989 and are maintained at the following locations to insure accessibility.

Information Repository
Administrative Record Laramie County Library
90 CES/CEVR Reference Section
Environmental Restoration Section 2800 Central Avenue
300 Vesle Drive Cheyenne WY 82001
F. E. (307) 775-3468

These records are maintained according to EPA guidelines, by the Environmental Restoration Flight, and are updated at least quarterly.

MAILING LIST

A major part of the public relations activities is the mailing list. In an attempt to proactively contact the 2,300 well owners identified in the EPA Superfund hazard ranking package submitted for the Base, the USAF sent a general mailing to well owners within a 3-mile radius. The Wyoming State Engineer's Office provided the mailing list of well owners. The mailing included a brief status report and a coupon to be mailed back if the well owner wanted to be added to the mailing list for distribution of later status reports. This activity resulted in the current list that has about 600 names on it. The mailing list is maintained in the F. E. Warren Air Force Base Public Affairs Office. Status Reports or Fact Sheets are mailed on a quarterly basis. Anyone who desires to be included on the list should contact either of the following offices.

90 CES/CEVP 300 Vesle Drive F. E. Warren AFB WY 82005-2788 Phone (307) 775-4154

90 CES/CEVR 300 Vesle Dr., Suite 600 F. E. Warren AFB WY 82005-2788 Phone (307) 775-3468

INFORMATION CONTACT

An information contact person has been designated within the F. E. Warren Air Force Base Environmental Restoration Section to maintain regular contact with the community. This person will be responsible for responding to requests for information and planning and scheduling activities included in the plan. The preparation of materials for public distribution will be coordinated with the Public Affairs Office. General public information requests should be directed to (307) 775-3468. The media contact for F. E. Warren Air Force Base is the Environmental Public Affairs office at (307) 775-4154.

Appendix A

Federal and Wyoming State Applicable, or Relevant and Appropriate Requirements (ARARs) For Nob Hill Interim Action at F.E. Warren AFB

Table A-1-Federal Chemical-Specific ARARs

[USC, United States Code; CFR, Code of Federal Regulations; Statute; Exec., Executive; DOT, Department of Transportation; FS, Feasibility Study]

Standard requirement, Description Applicable/ limitation Relevant and Appropriate	Citations Comments criteria, or
Safe Drinking Water Act	42 USC 300g
National Primary Drinking-Water Regulations (maximum contaminant levels)	40 CFR 141, Subparts B and G
Establish health based standards for the public water systems	No/Yes
Groundwater is a potential or actual source of drinking water. This interim action is due to groundwater contamination. The cleanup of ground water will be addressed in subsequent actions	